



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/664,691

09/18/2003

Arihiro Takeda

1117.68337

5204

7590

03/30/2004

Patrick G. Burns, Esq.  
GREER, BURNS & CRAIN, LTD.  
Suite 2500  
300 South Wacker Drive  
Chicago, IL 60606

EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No. 

10/664,691

Applicant(s)

TAKEDA ET AL.

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-21 ~~is~~are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-21 ~~is~~are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Priority***

1. This application appears to be a division of Application No. 10/047,216, filed 01/14/2002. A later application for a distinct or independent invention, carved out of a pending application and disclosing and claiming only subject matter disclosed in an earlier or parent application is known as a divisional application or "division." The divisional application should set forth only that portion of the earlier disclosure which is germane to the invention as claimed in the divisional application.
2. Claims 1-16 and 22-33 were cancelled and claims 17-21 are currently pending in this application.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Art Unit: 2871

4. Claims 17, 18 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Takeda et al. (Pub. No. 2003/0202146 A1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As shown in Figs. 33, 34 and 44, Takeda et al. discloses a liquid crystal display device comprising:

- a first substrate 235 having thereon a pixel electrode 212 and an active element TFT 210;

- a second substrate 236 having thereon an opposed electrode 254; and

- a liquid crystal layer 229 interposed between said first and second substrates with said electrodes facing each other,

- wherein a first orientation control element (top and bottom Y-shaped portions formed on the pixel electrode 212) extending in a nonparallel direction relative to an extending direction of an edge of said pixel electrode and a second orientation control element 228b extending in a parallel direction relative to an extending direction of said edge are provided on at least one of said first and second substrates.

Re claim 17, since the second orientation control element is a nonalignment defining area, liquid crystal molecules of said liquid crystal layer on said second

Art Unit: 2871

orientation control element are non-vertically oriented relative to said substrate when no voltage is being applied between said pixel and opposed electrodes (page 18, paragraph 308).

Re claim 18, the liquid crystal molecules of said liquid crystal layer on said second orientation control element are oriented in substantially the same direction as an extending direction of said second orientation control element as shown in Fig. 44.

Re claim 21, a dielectric anisotropy of said liquid crystal molecules of said liquid crystal layer is negative (page 4, paragraph 49).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being obvious over Takeda et al. (Pub. No. 2003/0202146 A1).

Takeda et al. discloses a liquid crystal display device that is basically the same as that recited in claim 20 except that the second orientation control element is not a protrusion. As shown in Fig. 41A of the eleventh embodiment, Takeda et al. discloses a protrusion 217 formed on a pixel electrode 212 such that the alignment change of the liquid crystal molecules is carried out quickly (page 19, paragraph 315). Thus, it would have been obvious that the second orientation control element can be formed as a

Art Unit: 2871

protrusion to improve the response characteristic of the display (page 19, paragraph 315).

7. Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koma (USPN 6,229,589 B1) in view of Takeda et al. (Pub. No. 2003/0202146 A1).

As shown in Figs. 6 and 7, Koma discloses a liquid crystal display device comprising:

- a first substrate 10 having thereon a pixel electrode 19 and an active element;
- a second substrate 30 having thereon an opposed electrode 31; and
- a liquid crystal layer 40 interposed between said first and second substrates with said electrodes facing each other,

wherein a first orientation control element 32a, 32b, 32c including Y-shaped portions extending in a nonparallel direction relative to an extending direction of an edge of said pixel electrode; and a second orientation control element 19d, 19e extending in a parallel direction relative to an extending direction of said edge are provided on at least one of said first and second substrates.

Re claim 19, the first orientation control element is a slit formed in the opposed electrode 31 (col. 6, lines 1-4).

Re claim 17, Koma discloses a liquid crystal display device that is basically the same as that recited in claim 17 except for disclosing the orientation of the liquid crystal molecules on the second orientation control element when no voltage is being applied between said pixel and opposed electrodes.

Art Unit: 2871

As shown in Figs. 45A and 45B, Takeda et al. discloses a local portion in one pixel comprising nonalignment defining areas 228c on which the liquid crystal molecules are non-vertically oriented when no voltage is being applied between the pixel and opposed electrodes (page 20, paragraph 331).

Re claim 18, Takeda et al. discloses that the liquid crystal molecules 229h on said nonalignment defining areas 228c are oriented in substantially the same direction as an extending direction of said second orientation control element as shown in Fig. 45A.

Re claim 20, as shown in Fig. 41A of the eleventh embodiment, Takeda et al. discloses a protrusion 217 formed on a pixel electrode 212 such that the alignment change of the liquid crystal molecules is carried out quickly (page 19, paragraph 315).

Re claim 21, Takeda et al. discloses that a dielectric anisotropy of said liquid crystal molecules of said liquid crystal layer is negative (page 4, paragraph 49).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Koma with the teaching of Takeda et al. by forming a second orientation control element such that liquid crystal molecules on said second orientation control element are non-vertically oriented relative to said substrate when no voltage is being applied between the pixel and opposed electrodes so as to achieve a good picture quality (page 6, paragraph 78).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-

Art Unit: 2871

2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



03/16/2004



ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800